



# ROLE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT

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## ABSTRACT

The realization of the pressing need to save the planet from imprudent exploitation of the depleting natural resources has impressed upon the collective consciousness of the countries of the world and brought into focus an intensifying thrust on sustainable development. Sustainable development encompasses a wide spectrum of issues that affects every aspect of human life and its implications for the environment. To address these issues there is a strong need for human ingenuity and imagination, efficient decision making, and planning and management skills. Education has the potential of providing the necessary knowledge, skills, and discretion, and instils cultural, behavioural and ideological transformation that brings the desired sensitivity towards the tenets of sustainable development. The literature on sustainable development is replete with studies that examine various facets of the role of education for sustainable development. The purpose of the paper was to bring together various studies on the role of education in sustainable development and to identify important elements, dimensions and challenges of education for sustainable development.

**KEYWORDS:** Environmental Education, Primary, Secondary and Higher Education, Educators, Learners and Learning, Research in Education, JEL Classification: I20, Q01

## INTRODUCTION

The realization of the pressing need to save the planet from imprudent exploitation of the depleting natural resources has impressed upon the collective consciousness of the countries of the world and brought into focus an intensifying thrust on sustainable development. Worldwide involvement and partnership in creating the much needed awareness towards environment conservation began with the Stockholm Conference in 1972. In the years to follow the thrust on Sustainable Development gained momentum. The term sustainable development was well articulated in its definition in the Brundtland Report (1987) as 'meeting the needs of the present without compromising the ability of future generations to meet their own needs.' Defined thus, Sustainable Development covers a wide spectrum of issues that affects every aspect of human life and its implications for the environment. It is a process that calls for involvement of human ingenuity and imagination, efficient decision making, management skills, entrepreneurship, development and production with environmental conservation etc. (Sharma, 2014).

Education, which is a process of acquiring knowledge and skills, discretion and values, beliefs and habits, assumes grave significance in achieving the objectives of sustainable development. The critical role of education is underlined by the fact that responses to climate change and sustainable development involve more than technological and financial policies. It requires ".....broader structural, cultural, perceptual, behavioural and ideological shifts (MoChizuki and Bryan, 2015). Since environment touches each aspect of human life, be it physiological, psychological, social, economic, and political, the integration of education with sustainable development cannot be overemphasized for the impact it can have in imbuing environmental sensibilities. The role of quality higher education in achieving the objectives of sustainable development is thus more than tangential and needs to be appreciated, emphasized and explored continuously and consistently. Justice J. S. Verma (2004) emphasized on the interface between quality higher education and its profitable use to achieve the target of sustainable development and the need to develop partnerships between the institutions concerned along with participation of the community. Thakran (2015) considers building the capacity for future-oriented thinking as the key task of education.

Education for Sustainable Development involves a set of processes, pedagogies and practices that aim at ascertaining that education systems are equipped to respond to the changing dimensions of the challenges of sustainable development. It entails an in-depth understanding of the interdisciplinary and multidisciplinary character of the knowledge that is required to be imparted and calls for far-reaching changes in perceptions and attitudes towards sustainable development. Only then the scientific, ecological, economic, political, ethical and social dimensions of environmental issues can be more fully appreciated.

## BACKGROUND OF EDUCATION FOR SUSTAINABLE DEVELOPMENT

Chapter 36 of Agenda 21 of the Rio Declaration (1992) states that "Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues,.....it is critical for achieving environmental and ethical awareness, values and attitudes, skills and

behaviour consistent with sustainable development, and for effective public participation in decision making." As justly stated by UNESCO, given the wholeness and interdependence to life in all its forms, there must be unity and wholeness in the efforts to understand education for sustainable development and ensure its continuation. And this calls for both interdisciplinary inquiry and action. At the same time, UNESCO emphasizes the role of traditional disciplines as necessary in allowing the depth of inquiry needed for major breakthroughs and discoveries. (UNESCO, 1997)

Recognising the significance of education and its indispensability for achieving sustainable development, the UN General Assembly declared 2005-14 as 'UN Decade of Education for Sustainable Development' after the Johannesburg Conference in 2002 on sustainable development. The **vision** of Education for Sustainable Development (ESD) is a world where everyone has the opportunity to benefit from quality education and learn the values, behaviour and lifestyles required for a sustainable future and for positive societal transformation (UNESCO).

ASPnet - UNESCO Associated Schools Project network which brings together more than 9000 educational institutions comprising pre-schools, primary, secondary, technical and vocational schools, across 180 countries with ESD being one of its embedded themes, speaks volumes of the significance of sustainable development and the role of schools in this regard. ESD has five components, namely, knowledge, skills, perspectives, values and teaching issues which are to be addressed in a formal curriculum for sustainable development.

In India, in 2004 the Supreme Court made Environmental Education mandatory in schools and higher education institutions with the aim to sensitise the youth towards environmental issues and concerns. Since then there have been intensified efforts in educational institutions to support and promote sustainable development. Following this, the National Curriculum Framework (NCF, 2005) developed by the NCERT emphasized on a shift from teaching to learning and has as one of its key guiding principles – connecting knowledge to life outside the school. The National Curriculum Framework for Teacher Education (NCFTE, 2009) too incorporated pedagogy of environmental studies in teacher preparation courses.

## OBJECTIVES AND METHODOLOGY

The objective of this paper is two-fold. Firstly, the purpose is to bring together important studies on the role of education for sustainable development. Secondly, the paper aims at identifying important elements and dimensions of the role of education for sustainable development. For this purpose, a wide array of studies on education for sustainable development has been surveyed and put into proper perspective. Important issues and challenges emerging from the review of literature are identified.

## REVIEW OF LITERATURE

The literature on ESD is rich with studies that emphasize and examine the role of education in bringing about sustainable development. The studies encompass several aspects of the ESD in terms of its challenges, strategies, role of educators,

and country-wise approaches, to name a few. These studies have been grouped and examined under three subheads as follows.

- Aspects Involved In Education And Research
- Role of Educators
- Teaching Learning Methods

#### Aspects Involved in Education and Research

Rickinson (2001) brings out the significance of environmental education with its increased diversity and emphasizes on identifying several criteria by which the impact on learners and learning in primary and secondary school can be captured. These include students' environmental knowledge, their environmental attitudes and behaviours, and their environmental learning outcomes, perceptions of nature, experiences of learning, and influences on adults.

Soundararaj (2004) highlighted the ability of higher education to address the issues of poverty and equity and thereby contribute towards sustainable development. Gupta (2005) points out the multi-faceted dimensions of ESD as a mix of environmental education, value education, citizenship education, multi-disciplinary education and systems education.

Singh (2010) discusses the four major thrust areas that lie in the scope of ESD, namely, promotion and improvement of basic education, reorienting existing education at all levels to address sustainable development, creating public awareness and understanding of sustainability, and training and skills development for result oriented action. MoChizuki and Bryan (2014) opine that the education sector remains underutilized as a strategic resource to assuage and acclimatize to climate change and at the same time educationalists, climate scientists and those formulating education policy lack adequate understanding of what comprises education in environmental issues. They underline the crucial role of education in bringing about transformative shifts in perceptions and actions that help to relate present and future generations.

Govindaswamy (2010) argues that the progress that developed countries have made towards protection of environment is only by relocating hazardous manufacturing facilities to the poor and underdeveloped countries. In this context the empowerment of public with knowledge of environmental issues is of paramount importance. Education becomes the means of prevention as it sensitizes people about their environmental conditions and encourages active participation in problem solving.

Gopal and Anand (2006) assert that once basic education is in place, education focussed on sustainable development and environmental issues can be incorporated at higher secondary level so as to imbibe an attitude of learned concern for and active participation in resolving environmental issues. Similar observation is echoed in Bhagwat and Abhyankar (2016). They consider school education as the fundamental base to promote awareness, attitudes and skills towards sustainable development and imbibe values of responsible citizenship at young age. Basic education cannot be neglected as it is a fundamental right and therefore all compassing in its reach to include those living under the circumstances of poverty, geographical remoteness and gender or cultural marginalisation. Basic education provides the base for education for sustainable development. They also examine the contribution of higher education system in promoting environmental and social sustainability for a wholesome development of the country.

Hart and Nolan (1999) highlight the growth of environmental education research as an active area of inquiry within the field of education and the increase in environment-related activity within schools. Sharma (2014) presents an overview of the role of research and higher education in the development of a country in sustainable manner. The significance of research is underlined by the fact that it can result into discovery of new tools to deal with issues of environmental degradation and conservation. Bhagwat and Abhyankar (2016) also maintain that socially significant research in the field of sustainable development needs to be encouraged and facilitated.

#### Role of Educators

Educators have a significant role in promoting environmental sensibilities. In this context a guide prepared by experts in education and sustainable development in collaboration with Quality Assurance Agency for Higher Education (QAA) and the Higher Education Academy (HEA), talks on the role of education providers in fostering the knowledge, understanding and skills of students in the area of sustainable development. It emphasizes on outcomes-based framework for use in curriculum design. It has focussed on applicability for educators in all disciplines so that learning about sustainable development can be embedded within any curricula. Chhokar (2010) analyses national development in higher education for sustainable development in India. The author highlights the incompetence among staff and students to absorb the interdisciplinary nature of the subject which thereby affects effective implementation of environmental education. Dasgupta (2015) brings forth the great lacunae in sustainable economic development on account on urban bias among higher education institutions. An important assertion made by Bhagwat and Abhyankar (2016) is that apart from imparting environmental education, the institutions of higher education must also uphold the responsibility of exemplifying their role by adopting green campus concept with a thrust on three Rs, namely, Reduce, Reuse and Recycle.

Ambusaidi and Washahi (2016) investigate the perception of Oman's prospective teachers regarding the concept of sustainable development and three related issues, namely, cultural diversity, renewable energy and equity. The results showed that the main source of knowledge for prospective teachers concerning the concept of sustainable development was limited to school textbooks and there was no significant impact of prospective teachers' area of specialization whether science or humanities on their perceptions under examination. The study found no significant difference in gender specific perceptions about the subject examined except in the domain of equity.

#### Teaching Learning Methods

Gadotti (2001) avers that the declaration of Decade of Education Sustainable Development (DESD) brought great opportunities for environmental education to be explored in wider context and at the same time presents the challenges faced by ESD. He highlights strategies adopted by various regions and countries towards ESD. Europe for instance, focuses on training new educators so that they are equipped to include sustainable development in their teaching practice. Germany has the orientation that goes beyond raising environmental awareness, and focuses on empowering people in general to take action and participate in social decision making processes. Scotland and Hungary have adopted the concept of eco-schools wherein the pedagogical project is based on values of sustainability, environmental education, education for a healthier lifestyle and education for democratic participation. Finland has put a strong emphasis on adult education within the DESD. Japan has established many programmes to promote quality education with a strong focus on teacher training.

The author further makes a striking observation that our educational systems have been more a part of problems of sustainable development than a part of the solution. In this context, he speaks of curricular reorientation entailed in the term eco-pedagogy stating that the classical paradigms were inadequate. ESD therefore necessitates the re-examination of educational policy and re-orientating it from kindergarten up to university and lifelong learning. Only then the focus can be clear on acquiring knowledge, competencies, perspectives and values that are related to sustainability as also iterated in UNESCO (2005).

Gupta (2005) points out the multi-faceted dimensions of ESD as a mix of environmental education, value education, citizenship education, multidisciplinary education and systems education. Given the multi-dimensional nature of environmental education the author points out the need for diverse educational techniques and strategies like experimental learning, enquiry based learning, situation analysis, forward and backward visioning, storytelling, brainstorming, and mapping to explore the issue in its totality.

Agashe (2005) emphasizes the need of selecting appropriate teaching-learning strategies for greater effectiveness. In this context she points out cooperative learning as being more effective than conventional method for better implementation of ESD in India. Cooperative learning involves students' participation in group learning through positive interaction. The author ascribes to education the task of imbibing the capacity to think in terms of 'forever'. And this is possible only when the objectives, concepts and learning experiences of ESD are oriented into syllabi and teaching practices. The author convincingly brings out the linkage between ESD and cooperative learning by illustrating how the dimensions of sustainability, namely, social, ecological, economical and political can be achieved through the strategy of cooperative learning. This is because cooperative learning entails the values of peace, equity, conservation, democracy and appropriate development, which are essential to achieving sustainability. The strategy of cooperative learning best suits the progression of environmental education from awareness stage to action.

Stevenson (2007) points to the discrepancy between the action-oriented problem-solving goals of contemporary philosophy of environmental education and the content of curriculum materials commonly used in schools across the USA and Australia. The author ascribes it to the traditional purpose and structure of schooling. Ravindranath (2007) emphasises on the need for appropriate changes in teacher education curriculum in terms of content, learning and teaching methodologies and materials development so that inclusion of sustainable development at school level is more effective.

Govindaswamy (2010) convincingly brings forth the effectiveness of early education on environmental issues by the impact it has in shaping children's conceptions of environmental degradation that stem from modes of reasoning that are organized and relevant to them. The author emphasizes that environmental education needs to build on the infantile interpretations and bring about conceptual change so as to align more closely with those of the scientific community. In this context, developing teaching strategies for schools that favour conceptual change is important. He further argues for inclusion of education in moral and ethical philosophy for wholesome appreciation of the issues of environment because science and technology no matter how advanced, cannot help in bringing attitudinal changes.

Rolf and Reiner (2014) examine the implementation of ESD programmes in schools across Europe. They describe and analyze how individual countries and the region as a whole have established teaching and learning methods to enable students develop the competencies needed to build a sustainable society.

Panth (2015) emphasizes on ESD to go beyond mere information sharing and rather focus on those who can bring faster results in terms of environmental improvements, be it consumers, decision makers, administrators and public at large. She suggests firstly identifying areas where unsustainable methods of development are being practiced so that the target group can be focussed upon. The author therefore seeks to differentiate between short run and long run role of ESD. Accordingly, ESD is short term, aiming at quick results, while environmental education is long run and can be achieved by formal education incepted at school level. However, the author is of the opinion that the curriculum in Indian schools is already highly over loaded, and adding more subjects—such as environment, ecology, etc. will impose a greater burden on the children, without fetching corresponding results. Nonetheless, this cannot be considered as a valid reason for exclusion of environmental education. More practicably, environmental education in higher education institutions can bring results in the medium and long term with greater appreciation of environmental issues among students.

Madsen, Nordin and Simovska (2016) seek to investigate how ESD and health education is approached and conceptualised at municipal school level in Denmark. They explore the contradictions and difficulties that local structures imply for ESD. They find that local approaches are largely based on plurality and voluntarism, and are formed around enthusiasts bringing in unwarranted flexibility so that the framework often falls apart.

## ISSUES EMERGING FROM SURVEY OF LITERATURE

### Dimensions of Education for Sustainable Development

The examination of the literature on education for sustainable development brings forth a wide range of dimensions that are involved in it and which therefore pose several challenges in achieving the desired level of success. The dimensions and challenges emerging from the literature review are underlined below.

- ESD involves a comprehensive approach to educational reform and therefore there is a need to extend beyond the boundaries of individual school subjects. It entails the attention of teachers, educational administrators, planners and curriculum agencies.
- Reforms need to integrate the objectives, concepts and learning experiences of education for a sustainable future into the syllabi and the teaching programmes.
- Innovation in curriculum is required to overcome the inadequacy of traditional methods in higher education for sustainable development.
- There is a need for outcome based and learner-centred approach to ESD rather than mere information sharing. The effectiveness of such an approach can be enhanced by focussing on targeting groups that bring faster results in terms of environmental improvements.
- ESD needs to be carried out on continuous and consistent basis rather than with an ad-hoc approach.
- With the increasing thrust on education for sustainable development and environmental education, sight should not be lost of need to strengthen basic education as a fundamental right as it lays the foundation for imparting environmental education at secondary and tertiary levels.
- Appropriate changes in teacher education curriculum in terms of content, learning and teaching methodologies, and materials development is imperative so as to make environment oriented education at school level more effective.
- Environmental workshops and training programmes for educators are imperative so as to build a core of experts in the field.
- In the area of higher education, the research programme should be influenced by striving for sustainability. Application-oriented and socially significant research in environmental studies needs to be facilitated and funded so as to make ESD sharper and more pronounced.
- Higher education institutions need to play an exemplary role in adopting green campus concept with active involvement of students for experiential learning.

### Challenges of Education for Sustainable Development

- ESD being a transformative education, it calls for transformational motivators or educators who can understand its continuously evolving nature and impress the same on the learners.
- Effective implementation of ESD is hampered by the lack of interdisciplinary competence among staff and students. The interdisciplinary nature of the subject entails inputs from the field of economic development, technology, political and trade factors, studies of ecology, and environmental degradation and makes ESD multidisciplinary.
- In the Indian context, there is a need to address the sense of apathy among

some sections of the teaching community that stems from the perception that ESD is a western concept. There is a need to ingrain the conception that the tenets of ESD are well rooted in the age-old system of education that prevailed in the Indian culture.

- There is a great lacunae in imparting ESD in rural areas on account of the urban bias among higher education institutions. Educational institutions can capitalize on the rural setting and imbibe the values of sustainable development by incorporating hands-on involvement of students with nature oriented practices.
- The classical paradigms of formal education system are inadequate to respond to the contemporary requirements of ESD. In this context, re-examination of the educational policy and reorientation of curriculum from kindergarten up to university level and lifelong learning is imperative.
- Educational institutions need to be wary of approaches largely based on plurality and voluntarism and formed around enthusiasts as they run the risk of becoming too flexible to achieve concrete results.

## CONCLUSION AND REFLECTIONS

A very important aspect of making development sustainable in nature is to ensure quality of education, the foundation of which lies in primary and secondary education. Given the tall order that education for sustainable development calls for, there is a pressing need to set the education system of India in place. Unfortunately, it is also a sector in which policy approach is rather tentative, ad-hoc and short-sighted in nature as is evident in the decisions taken by governments over the years. When the current state of education in the terms of the quality of education imparted, the quality of learners and that of educators is juxtaposed with the lofty requirements of imbuing sensitivity towards sustainable development, a lot remains wanting.

An approach towards education that is focussed only on conjuring up the required statistics is destined to achieve little. The lack of vision among policymakers and their failure to perceive the influence of quality education in building a cohesive society characterized by harmony, empathy and scientific temperament is manifested in the subjugation of the role of educators, particularly, at primary and secondary levels. Extensive and intensive house-cleaning of the education system is required if the government is serious about the contribution of education in taking the country to high and sustainable levels of wholesome development.

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